INDIAN BEND WASH NEAR INDIAN BEND ROAD
FCD GAGE ID# 4613

STATION DESCRIPTION

LOCATION – The gage site is approximately 1/4 mile south of Indian Bend Road and 1/4 west of Hayden Road in Scottsdale. The gage is located on the left bank (east bank) of the Indian Bend Wash near the Arizona Canal siphon. The gage is in a low flow channel in the Scottsdale Links golf course. Latitude N 33° 32' 07.2"; Latitude W 111° 54' 46.6". Located in the SE1/4 NE1/4 S11 T2N R4E of the Paradise Valley 7.5-minute quadrangle.

ESTABLISHMENT – The District established gaging on September 28, 1983.

DRAINAGE AREA – 88 mi^2 (including area from Interceptor channel)

GAGE – The gage is a pressure transducer type instrument. The PT diaphragm elevation is at -0.15 feet gage height.

There are two staff gages at this location.

Staff gage #1 is located on the right bank near the old gage house. It is the lower staff gage, range 3.0 to 7.7 feet. To get gage height readings, add 1.15 feet to staff readings, levels of February 24, 2000.

Staff gage #2 is located on the right bank near the old gage house. It is the upper staff gage, range to 7.6 to 10.6 feet. To get gage height readings, add 1.2 feet to staff gage readings, levels of February 24, 2000.

There is one crest stage gage at this location. The pin elevation is at 0.20 feet gage height, levels of February 24, 2000.

ZERO GAGE HEIGHT – Zero gage height is the 0.00 reading on the staff gage located with the PT and crest gage. Elevation = 1,267.18 feet NAVD 1988, levels of March 31, 2004.

HISTORY – The USGS has maintained a gage at this location from January 1961 through September 1984. The District began gaging this location September 28, 1983. The gaging station was located on the right bank of the channel. A manometer type gage was originally used. The first rating was developed in February 1992. The manometer gage was replaced with a pressure transducer on March 27, 1992. A crest stage gage was installed on January 22, 1997 on the 0 – 5 foot staff gage. The gage was removed on July 7, 1999 for construction. The gage was reestablished on the left bank on January 25, 2000. A non-submersible bubbler type pressure transducer was installed on March 27, 2000, divisor = 100. The gas-purge/bubbler system was removed on May 9, 2002. A

standard pressure transducer was added. Also, erosion of the original concrete pad with the orifice line necessitated its replacement. A new pad was poured and the transducer elevation is -0.15 feet gage height.

REFERENCE MARKS –

RM-IBWIBRD is an FCD brass cap located just south of the station house on the east bank of the channel. The RM was established in November 2000. Elevation 18.55 feet gage height, levels of March 31, 2004, or 1,285.725 feet NAVD 1988, levels of March 12, 2001. Northing 922272.424 feet; Easting 701270.594 feet.

RM1 – is a chiseled '+' on the right, downstream edge of the bridge curbing that is approximately 100 feet upstream of the gage. Elevation 3.71 feet gage height, levels of February 24, 2000.

RP1 – is the top of the metal staff plate at the gage. Elevation 5.00 feet gage height.

CHANNEL AND CONTROL – The channel upstream and downstream of the gage is a golf course, that is mostly grass lined. Low flow control is a 10-foot wide channel where the gage is located. Higher flows are controlled by the main channel, which is approximately 300 feet wide.

RATING – The current rating is Rating #5, dated March 27, 2003, and made effecting February 1, 2000. Rating #5 was created in response to significant discrepancies that existed between flows up and downstream of this gage. Rating #5 is a combination of several factors. First, two low flow discharge measurements were made at gage installation. Second, a Manning discharge was computed for the February 14, 2003 event. Third, HEC-RAS was run with a smaller slope and less roughness than Rating #4. Fourth, a "fit" was made between discharges and areas for this gage and the McDonald Drive gage, just 0.8 miles downstream. It is concluded that the HEC-RAS analysis is not valid for levels below about 5.0 feet gage height due to channel split at the gage.

DISCHARGE MEASUREMENTS – Low flow discharge measurements could be made by wading the channel, golf course function permitting. Higher flows could be measured using indirect methods, assuming the golf course operators allow.

POINT OF ZERO FLOW – The PZF is at about -0.2 feet gage height.

FLOODS – The peak for the period of record was July 24, 1992, with 9,324 cfs and 5.85 feet gage height. The peak for the USGS was approximately 21,000 cfs from June 22, 1972.

REGULATION – No known regulation

DIVERSIONS – Diversions occur into the several golf course lakes upstream.

ACCURACY – Fair

JUSTIFICATION – Monitor flows in the Indian Bend Wash for flood warning for the city of Scottsdale. Several roads cross the low flow part of the channel and need to be closed during flood events. Also the channel is used as a recreation area by citizens and flood warning is required for evacuation.

UPDATE - July 19, 2011
D E Gardner